In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (original) A pixel device of an electroluminescence device comprising:

a voltage signal having a first state and a second state;

a current signal;

a first circuit further comprising a first transistor, a second transistor and a capacitor, the capacitor including a first terminal coupled to a power supply, the first transistor including a gate electrode coupled to a second terminal of the capacitor, and the second transistor including a gate electrode receiving the voltage signal, wherein the first circuit provides a voltage level across the capacitor in response to the first state of the voltage signal, and maintains the voltage level in response to the second state of the voltage signal; and

a second circuit further comprising a third transistor and a fourth transistor, the third transistor including a gate electrode coupled to a gate electrode of the fourth transistor;

wherein the second circuit provides a current proportional to the magnitude of the current signal in response to the first state of the voltage signal, and the first circuit provides a sum current of the proportional current and the current signal.

2. (original) The device of claim 1, the third transistor having a channel width/length value N times a channel width/length value of the fourth transistor.

3. (original) The device of claim 1, the magnitude of the current signal being N times the magnitude of the proportional current.

4. (original) The device of claim 1, the voltage level satisfying an equation:

$(1 + 1/N) I = (\mu C_{OX}/2) (W/L) (|V_C| - |V_T|)^2$

where μ is the mobility of carriers, C_{OX} is oxide capacitance, W/L is the channel width/length of the first transistor, V_C is the voltage level and V_T is a threshold voltage of the first transistor.

5. (original) The device of claim 1 further comprising a fifth transistor including a gate electrode receiving the voltage signal, and an electrode receiving the current signal.

6. (original) The device of claim 1, the third and fourth transistors are of a same conductive type.

7. (original) The device of claim 5, the second and fifth transistors are of a same conductive type.

8. (original) The device of claim 1 further comprising a light emitting diode disposed between an electrode of the fourth transistor and the power supply.

9. (original) The device of claim 1 further comprising a light emitting diode disposed between an electrode of the fourth transistor and a different power supply.

10. (original) The device of claim 1 further comprising a light emitting diode disposed between an electrode of the first transistor and the first terminal of the capacitor.

11. (original) A pixel device of an electroluminescence device comprising:

a voltage signal having a first state and a second state;

a current signal of a magnitude I;

a first circuit further comprising a first transistor, a second transistor and a capacitor providing a voltage level across the capacitor in response to the first state of the voltage signal, and maintaining the voltage level in response to the second state of the voltage signal; and

a second circuit further comprising a third transistor and a fourth transistor, the third transistor including a channel width/length value N times a channel width/length value of the fourth transistor;

wherein the first circuit provides a current of (1 + 1/N) I during the first and second states of the voltage signal, and the second circuit provides a current of 1/N I in response to the first state of the voltage signal.

12. (original) The device of claim 11, the voltage level satisfying an equation:

$(1 + 1/N)\ I = (\mu C_{OX}/2)\ (W/L)\ (|V_C| - |V_T|)^2$

where μ is the mobility of carriers, C_{OX} is oxide capacitance, W/L is the channel width/length of the first transistor, V_C is the voltage level and V_T is a threshold voltage of the first transistor.

13. (original) The device of claim 11, the capacitor further comprising a first terminal coupled to a first power supply, and the first transistor further comprising a gate electrode coupled to a second terminal of the capacitor and a first electrode coupled to the first power supply.

14. (original) The device of claim 11, the second transistor further comprising a gate electrode receiving the voltage signal, and a first electrode coupled to the second terminal of the capacitor.

15. (original) The device of claim 11, the third transistor further comprising a gate electrode and an electrode coupled to the gate electrode, and the fourth transistor further comprising a gate electrode coupled to the gate electrode of the third transistor.

16. (original) The device of claim 11 further comprising a fifth transistor including a gate electrode receiving the voltage signal, and an electrode receiving the current signal.

17. (currently amended) An electroluminescence device comprising:

a plurality of scan lines;

a plurality of data lines; and

an array of pixels, each of the pixels being disposed near an intersection of one of the scan lines and one of the data lines comprising:

a first circuit further comprising a first transistor, a second transistor and a capacitor, the capacitor including a first terminal coupled to a power supply, the first transistor including a gate electrode coupled to a second terminal of the capacitor, and the second transistor including a gate electrode receiving a voltage signal;

a second circuit further comprising a third transistor and a fourth transistor, the third transistor including a gate electrode coupled to a gate electrode of the fourth transistor; and

a fifth transistor further comprising a gate electrode receiving the voltage signal, and an electrode receiving a current signal provided over a corresponding data line;

wherein the current signal has a magnitude I, the first circuit providing a first current of (1 + 1/N) I during the first and second states of the voltage signal, and the second circuit providing a second current of (1/N) I in response to the first state of the voltage signal, N being the ratio of a channel width/length of the third transistor to that of the fourth transistor.

18. (original) The device of claim 17, the first circuit providing a voltage level across the capacitor in response to a first state of a voltage signal provided over a

corresponding scan line, and maintaining the voltage level in response to a second state of the voltage signal.

19. (Canceled)

20. (original) A pixel device of an electroluminescence device comprising:

providing a voltage signal having a first state and a second state;

providing a current signal having a magnitude I;

providing an array of pixels, each of the pixels being disposed near an intersection of one of scan lines and one of data lines;

providing each of the pixels with a first circuit including a first transistor, a second transistor and a capacitor;

providing a voltage level across the capacitor in response to the first state of the voltage signal provided over a corresponding scan line;

maintaining the voltage level in response to the second state of the voltage signal;

providing each of the pixels with a second circuit including a third transistor and a fourth transistor, the third transistor including a gate electrode coupled to a gate electrode of the fourth transistor;

providing a first current of (1 + 1/N) I from the first circuit during the first and second states of the voltage signal; and

providing a second current of (1/N) I from the second circuit in response to the first state of the voltage signal, N being the ratio of a channel width/length of the third transistor to that of the fourth transistor.

21. (original) The method of claim 20 further comprising providing the first current to a light emitting diode during the first state of the voltage signal.

22. (original) The method of claim 20 further comprising providing the second current to a light emitting diode during the first state of the voltage signal.

23. (original) The method of claim 20 further comprising providing the first current to a light emitting diode during the second state of the voltage signal.

24. (original) The method of claim 20 further comprising providing the second current to a light emitting diode during the second state of the voltage signal.